a) receiving scroll events for incrementally advancing said indicator per scroll event in a first direction to provide fine-grain scroll indicator movement, and simultaneously tracking the advancing direction;

b) counting said fine-grain indicator increments in said first direction; and,

c) thereafter, in response to continued receipt of scroll events, providing in a manner that is seamless to a user, coarse-grain scroll indicator movement by advancing said indicator for a pre-determined number of increments per scroll event in said first direction when a count of said fine-grain indicator increments exceeds a predetermined number, said coarse-grain scroll indicator movement greater than said fine-grain scroll indicator movement, whereby fewer scroll device manipulations are required to achieve a desired scroll indicator position on said display.

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## REMARKS

Reconsideration of the above-identified application, as amended, is respectfully requested.

In the Official Action dated October 4, 2002, the Examiner rejected Claims 1-3, 7, 9-14 and 16-20 under 35 U.S.C. §102(b), as being anticipated by Will (U.S. Patent No. 5,477,508) (hereinafter "Will"). The Examiner further rejected Claims 8 and 15 under 35 U.S.C. §103(a), as being unpatentable over Will. The Examiner did further object to Claims 4-6 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

As a preliminary matter, applicant respectfully takes the opportunity to amend the pages 9, 13 and 15 of the specification to include current United States Patent Application Nos. where indicated.

With respect to the Examiner's rejection of Claims 1-3, 7, 9-14 and 16-20 as being anticipated by Will, applicant respectfully disagrees.

The present invention is directed to a wearable device/appliance (e.g., a wrist watch) capable of wirelessly accessing information and equipped with an interactive user interface including a scroll device implementing a dynamic scroll speed controller for enabling fine-grain and coarse-grain positioning of a scroll and/or cursor positioning of displayed content in a manner seamless to the user. The wrist watch and dynamic scroll speed controller is additionally capable of enabling scrolling through text and graphics displayed via the user interface in a manner such that the amount of user manipulation of the scroller to get to a particular position in the display the user wants to get to is reduced, while retaining fine-grain control over positioning without needing excessive scroller manipulation. Claim 1 of the present invention sets forth the method for dynamically controlling speed of a scroll device providing scroll functions for setting time of a time keeping display having minute and hour indicators, the scroll device generating scroll signals and communicating the signals to a control device for advancing the minute and hour indicators in response thereto, the method comprising steps of:

a) receiving first scroll signals from the scroll device and, in response to received first scroll signals, incrementally advancing a time keeping display minute indicator in a first direction according to fine-grain time increments, and simultaneously tracking the advancing direction;

b) determining a predetermined number of the fine-grain time increments in the first direction; and,

c) thereafter, in response to continued receipt of first scroll signals, seamlessly advancing the time keeping display minute indicator according to coarse-grain time increments in the first direction, the coarse-grain time increments greater than the fine-grain time increments,

whereby fewer scroll device manipulations are required to achieve a desired time set without notice to the user.

In his rejection of Claims 1-3, 7, 9-14 and 16-20, the Examiner cites Will as teaching a method for dynamically controlling the speed of a scroll device that provides scroll functions for setting the time of a time keeping display having minute and hour indicators wherein the scroll device generates scroll signals and communicates them to a control device for advancing the minute and hour indicators. In the rejection, the Examiner alleges that the Will controller device receives first scroll signals from the scroller and in response, incrementally advances a time keeping display minute indicator in a first direction according to fine-grain time increments, and simultaneously "tracks" the advancing direction. In support of this rejection, the Examiner cites the left part of curve 52 in Figure 8 of Will. Further, as part of the method for dynamically controlling cursor speed, the Examiner alleges that Will determines a predetermined number of fine-grain increments in a first direction and particularly relies on Figure 8 of Will as providing the basis for this rejection. The Examiner further alleges that in response to continued receipt of first scroll signals, the minute indicator is continually advanced in coarse-grain time increments in a first direction, the coarse-grain time increments greater than fine-grain time increments resulting in fewer scroll device

manipulations in order to achieve a desired time set. In support of this, the Examiner relies on the Will in Figure 8, the right part of curve 52.

Respectfully, while the Will patent is closely related to the present invention as it talks about a digital watch having a scroll wheel and how it can be used to navigate PIM data on a credit card sized PDA, it does not anticipate the claims of the present invention. Will provides examples of how to use a scroll wheel to navigate through menus, input text etc., and additionally provides a brief description of how one can use the speed with which the wheel is turned (rate of movement) to control how fast things change on the display. In the present invention, as claimed in Claim 1, it is not necessary to measure the speed (and consequently, do not measure the speed or rate of movement of the scroll wheel) to decide on fine/coarse grain changes on the display. Rather, the present invention implements the consistency of movement in the same direction to decide fine/coarse grain changes. Particularly, to implement dynamic speed control according to the invention, the consistency of movement in a particular direction is measured by counting indicator increments or "clicks" in the manner as set forth in the present invention by an algorithm described on pages 17 and 18. This is a key difference. Even though the Examiner indicates (in paragraph 4(b) of the Office Action) that Will determines a predetermined number of fine grain increments, applicant respectfully disagrees. This is because the X-axis of Figure 8 in Will's patent is the rate (meaning number of "click" events per second) and not the count. To further clarify this distinction, each of independent Claims 1, 10, 16 and 19 are being amended to set forth that the method for implementing dynamic speed control includes tracking the consistency of movement in a particular direction particularly by counting a number of fine-grain time (indicator) increments (e.g., in a particular direction) as set forth in the present specification

and controlling display navigation (or watch-hand indicator movement) according to fine or coarse grain settings in response to the count. For instance, Claim 1, paragraphs b) and c) now set forth a step of counting fine-grain time increments in the first direction; and, thereafter, in response to continued receipt of first scroll signals, causing seamless advancement of the time keeping display minute indicator according to coarse-grain time increments in the first direction when a count of fine-grain time increments exceeds a predetermined number.

As will does not teach the mechanism for dynamic scrolling according to the algorithm of the present invention as now set forth in amended Claims 1, 10, 16 and 19, it is respectfully requested that the Examiner withdraw the rejections of Claims 1, 10, 16 and 19 as being anticipated by Will.

With respect to the Examiner's rejection of Claim 2 as indicated in paragraph 5 of the Office Action, applicant respectfully disagrees. Claim 2 is a continuation of the steps of Claim 1 and the steps therein are interpreted as occurring after execution of the steps of Claim 1. For further clarification, Claim 2 is being amended to set forth that as a result of a user scroll device manipulation to cause a change in cursor movement direction, the time keeping display minute indicator movement is changed from coarse-grain time movement in the first direction to fine-grain time movement in the changed direction. Thus, even though Will describes that the direction of change is determined by the direction of wheel movement, Will does not teach or suggest the switching between fine and coarse grain cursor movement based on direction change. Rather, Will requires a change in the rate of events to change his fine/coarse grain mode. Thus, it follows that Claim 2 is patentable over Will and the Examiner is respectfully requested to withdraw the rejection of Claim 2 as being anticipated

by Will. It is further respectfully requested that in view of the foregoing, the Examiner additionally withdraw the rejection of remaining Claims 3 and 7 based upon Will.

With respect to the Examiner's rejection of Claim 9 as indicated in paragraph 8 of the Office Action, applicant respectfully disagrees. In general, it appears that Will teaches using a click event from the pressing of the selector to advance from one mode to another. However, Will does not explicitly talk about using the click event to switch between minute and hour. Respectfully, applicant submits that the specific portion referenced by the Examiner as the basis of his rejection (Will at Col 11, lines 7-9) talks about using the scroll wheel to scroll through a menu that is presented in 2 columns as opposed to one long column (because of insufficient space). Will does not use the wheel click (or select function) to go from one column to another. It is further respectfully requested that in view of the foregoing, the Examiner additionally withdraw the rejection of Claim 9 based upon Will.

In further regard to the rejection of independent Claim 10, the Examiner acknowledges that Will talks about using fine and coarse grain increments. However again it is respectfully submitted that this fine/coarse switching is based on rate of events which is harder to track than just scroll event count as now set forth in amended Claim 10. Thus, the Examiner is again requested to withdraw the rejection of Claim 9 based upon Will.

With respect to the rejection of Claim 11, the same comments as remarked hereinabove apply, i.e., that Will's cutoff between left and right sides of his Figure 8 are based on number of clicks per second (rate). Will simply does not teach using count of events to switch between fine and coarse only rate of events.

In sum, the Examiner is respectfully requested to withdraw all remaining claims dependent either directly or indirectly upon amended independent Claims 1, 10, 16 and

19. With respect to the other references made of record but not applied against the claims, the Will U.S. Patent No. 5,825,353 is similar to the applied Will Patent 5,477,508 and the present invention is distinguishable on the grounds discussed herein. Mallett (U.S. Patent No. 6,292,174) appears to discuss slow or fast mouse acceleration in a 2-dimensional screen while using a force-feedback mouse based on where the mouse cursor is in the 2d screen area. Aside from the use of different rates, this patent does not appear particularly relevant. Rosenberg (U.S. Patent No. 6,288,705) is similar to Mallett and Rosenburg (U.S. Patent No. 5,790,819) is not relevant as it discusses mechanism for zooming a 1-dimensional graph to different levels of magnification. Roth (U.S. Patent No. 6,209,343) discusses scrolling text in windows at different rates by dragging scroll bars and is not relevant. Nakamura (U.S. Patent No. 4,549,173) discusses scrolling through video frames at different rates during video editing which again is not relevant. Bates (U.S. Patent No. 5,371,846) discusses enhancing the value of scroll bar sliders in windows and again is not relevant.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment.

In view of the foregoing remarks herein, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance be issued. If the Examiner believes that a

telephone conference with the Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned, Applicants' attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,

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**Serial No:** 09/607,801 **Docket:** YOR920000238US1 (13572)

**VERSION WITH MARKINGS TO SHOW CHANGES MADE:**

**IN THE SPECIFICATION:**

Please amend the specification from page 9, line 4 through page 10, line 18 as follows:

-- For purposes of interacting with the device, the Wrist Watch system 10 is provided with a touch sensitive screen/panel 90 shaped within a standard watch form factor, and also a roller wheel mechanism, i.e., jog encoder 95. The touch sensitive screen enables the direct launching of applications by physical user entry of a graffiti "squiggle" in the manner such as described in commonly-owned co-pending U.S. Patent Application No. 09/607,596 [_____ [YOR92000-0234, Atty. Docket No. 13577]] entitled GRAFFITI BASED APPLICATION LAUNCH ON A SMART WATCH, the whole contents and disclosure of which is incorporated by reference as if fully set forth herein, and may initiate other applications/actions/events by physical touching of certain Wrist Watch display areas. In one embodiment, the touch sensitive screen panel is provided with a four (4) position touch screen. For instance, forward and back navigation for Wrist Watch displays is enabled by physically touching certain areas of the touch sensitive panel. The roller wheel mechanism 95 may be rolled up or down (i.e., clockwise or anticlockwise) to simulate a display cursor scrolling function for text and graphics. For example, in the context of the present invention, the roller wheel mechanism 95 generates signals that are A/D converted for receipt by the processor to enable movement of the Wrist Watch display cursor, and more particularly, movement of displayed minute hand and hour hand indicators for setting of various alarms

and time-keeping functions provided by the Wrist Watch system. Preferably, when the wheel mechanism moves by more than a predetermined amount, e.g., 20° degrees, the wheel generates a signal as a mouse device would when rolled. If a user rolls the wheel continuously, the wheel generates a signal for every 20 degrees of rotation (hereinafter "rotation event(s)"), with the event generated including an indication specifying whether the wheel was turned clockwise or anticlockwise. In this manner, the direction of the roller wheel, and consequently, the direction of cursor movement through a particular display, is tracked by the processor. The roller wheel mechanism additionally may be pushed or depressed to generate a signal (hereinafter "wheel click event(s)"), akin to a keypress or mouse click event, for activating a selected application, hyperlink or a menu item. In an alternate embodiment, the roller device may comprise a bezel which may be rotated and depressed for generating rotation and wheel click events respectively, such as described in commonly-owned co-pending U.S. Patent Application No. 09/607,594 [ [YOR92000-0235, Atty. Docket No. 13578]] entitled BEZEL BASED USER INTERFACE FOR A SMART WATCH, the whole contents and disclosure of which is incorporated by reference as if fully set forth herein. It is understood that other types of scroll device may be implemented to provide cursor movement, e.g., a slider. Moreover, a standard button may be implemented for providing selection functions.

Please amend the specification from page 13, line 1 through page 15, line 4 as follows:

– As further shown in Figure 3, the Wrist Watch device 10 is equipped with Wrist Watch shell application software 275 provided on top of the basic graphics, communication and synchronization subsystems. One key application supported is the microbrowser which

enables access to a WAP-supporting Web site and receives Web-based communications written in, for example, the Wireless Markup Language ("WML") using the XML standard. WML particularly is designed to optimize Internet text data for delivery over limited-bandwidth wireless networks and onto small device screens, and particularly, is devised to support navigation with limited input mechanisms, e.g., buttons. Details regarding the implementation of WML in the Wrist Watch device may be found in commonly-owned, co-pending U.S. Patent Application No. 09/608,042 [_____ [YOR92000-0224, Atty. Docket No. 13574]] entitled SYSTEM AND METHOD EMPLOYING WML ANNOTATIONS FOR USER INTERFACE CONTROL OF A WEARABLE APPLIANCE the contents and disclosure of which is incorporated by reference as if fully set forth herein. Other supported applications include Personal Information Management (PIM) applications software 280. Figure 4 illustrates an example system display 300 providing a main menu 302 comprising selectable icons for launching the following PIM applications: an icon 310 for launching an application directed to displaying/maintaining "to do" lists, an icon 312 for launching an application directed to displaying/maintaining calendars and appointments, an icon 314 for launching an application directed to retrieving/storing/displaying e-mail messages, an icon 316 for launching an application directed to retrieving/storing/displaying digital photographs and bit-mapped images, an icon 318 for launching an application directed to retrieving/storing/displaying phone lists, an icon 320 for launching an application directed to setting of time and alarms which is shown highlighted and indicated by the displayed text "SET ALARMS", an icon 322 for launching an application directed to retrieving/storing/displaying comic images such as Dilbert© United Feature Syndicate, Inc., and, an icon 324 for launching an application directed to providing stop watch and elapsed time features. Other applications may include those enabling the receipt of excerpts of

personalized data, such as traffic information, weather reports, school closings, stock reports, sports scores, etc., from the world wide web. These excerpts may be received as notifications or alarms on the Wrist Watch system 10. Inter-device interaction software applications are included to permit the watch display to become the display for another device such as a GPS located in a concealed location, (e.g., a bag), or a thermostat on the wall, etc. Thus, this application software enables communication between the other device and the Wrist Watch by receiving/displaying the data and transmitting back information sent from the Wrist Watch. As a further example, caller Id information may be displayed on the Wrist Watch display when the cell phone that belongs to that person rings. Typically, multiple persons are congregated in a room and carry their cell phones in a hand bag or wear them on their belts, have a hard time determining which cell phone is ringing when a ringing tone is heard in a room. This results in every person in the room pulling out his/her cell phone out of their handbag or belt to check if it is the one that is ringing. The caller Id display feature of the Wrist Watch device is particularly advantageous as each wearer may simply glance at the watch and would immediately know if the ringing phone belonged to him/her, in addition, to determining who the calling party is facilitating the decision of whether or not he/she should answer the phone. In a further example, this application software may allow the data from the Wrist Watch storage subsystem 240 to be viewed on another device such as on a PDA, PC, and other community viewing devices. In the preferred embodiment, middleware such as Tcl/Tk, Javascript, Perl, or the like etc., may run on-top of the operating system, graphics and communication manager APIs for facilitating rapid development of these applications on the Wrist Watch device 10.--

Please amend the specification from page 15, line 15 through page 15, line 33 as follows:

-- One task that the user may need to perform on the watch is to set the hour and minute hands to a particular value; for example, to set an alarm for a particular time. Figures 5(a) and 5(b) illustrates a Wrist Watch user interface 350 providing an alarm setting feature as described in detail in commonly-owned, co-pending U.S. Patent Application No. 09/608,043 [[YOR92000-0223, Atty. Docket No. 13573]] entitled ALARM INTERFACE FOR SMART WATCH, the whole contents and disclosure of which is incorporated by reference as if fully set forth herein. As shown in Figures 5(a) and 5(b) there is provided the Wrist Watch display 350 comprising a watch face 351 having indicators 360, 362 corresponding to hour hand 370 and minute hand 372, respectively, for setting an alarm notification time in hours and minutes via control of the Wrist Watch roller wheel device. The problem addressed by the present invention is to enable precise control for setting the alarm (as shown via watch indicators 360, 362) to a particular value (for example, to 12:53PM) but avoid having to continuously turn the roller wheel so that it generates a large number of rotation events (for example, 53 events to set the minute hand to 53).--

**IN THE CLAIMS:**

Please amend Claims 1, 2, 10, 16 and 19 as follows:

1. (Amended) A method for dynamically controlling speed of a scroll device providing scroll functions for setting time of a time keeping display having minute and hour indicators, said scroll device generating scroll signals representing scroll events and communicating said signals to a control device for advancing said minute and hour indicators in response thereto, said method comprising:

a) receiving first scroll signals from said scroll device and, in response to received first scroll signals, incrementally advancing a time keeping display minute indicator in a first direction according to fine-grain time increments, and simultaneously tracking the advancing direction;

b) [determining a predetermined number of] counting said fine-grain time increments in said first direction; and,

c) thereafter, in response to continued receipt of first scroll signals, seamlessly advancing said time keeping display minute indicator according to coarse-grain time increments in said first direction when a count of said fine-grain time increments exceeds a predetermined number, said coarse-grain time increments greater than said fine-grain time increments, whereby fewer scroll device manipulations are required to achieve a desired time set without notice to the user.

2. (Amended) The method as claimed in Claim 1, further comprising the steps of:

d) receiving second scroll signals in response to manipulating said scroll device to change direction of said time keeping display minute indicator;

e) determining said change in direction; and,

f) incrementally advancing said time keeping display minute indicator in said changed direction according to fine-grain time increments,

wherein said time keeping display minute indicator movement is changed from coarse-grain time movement in said first direction to fine-grain time movement in said changed direction.

10. (Amended) A system for dynamically controlling scrolling functions for a display indicator capable of navigating through a high-resolution display provided in a wearable appliance that displays textual or graphical content, said system comprising:

a scroll device for manipulation by a user to provide said scrolling functions for advancing said indicator, said scroll device generating scroll events; and,

a control device for receiving said scroll events, tracking an advancing direction of said indicator by counting received scroll events, and providing dynamic speed control of said indicator by advancing said indicator according to fine-grain and coarse-grain increments in response to a count of said received scroll events and said tracked direction, wherein said dynamic speed control is seamless to the user.

16. (Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for dynamically controlling scrolling functions for a display indicator capable of navigating through a display provided in a wearable appliance that displays textual or graphical content, said appliance implementing a scroll device for generating scroll events in response to user manipulation thereof, said method steps including the steps of:

a) receiving scroll events for incrementally advancing said indicator per scroll event in a first direction to provide fine-grain scroll indicator movement, and simultaneously tracking the advancing direction;

b) [determining a predetermined number of] counting said fine-grain indicator increments in said first direction; and,

c) thereafter, in response to continued receipt of scroll events, providing in a manner that is seamless to a user, coarse-grain scroll indicator movement by advancing said indicator for a pre-determined number of increments per scroll event in said first direction when a count of said fine-grain indicator increments exceeds a predetermined number, said coarse-grain scroll indicator movement greater than said fine-grain scroll indicator movement, whereby fewer scroll device manipulations are required to achieve a desired scroll indicator position on said display.

19. (Amended) A [Method] method for dynamically controlling scrolling functions for a display indicator capable of navigating through a display provided in a wearable appliance that displays textual or graphical content, said appliance implementing a scroll device for generating scroll events in response to user manipulation thereof, said method comprising the steps of:

a) receiving scroll events for incrementally advancing said indicator per scroll event in a first direction to provide fine-grain scroll indicator movement, and simultaneously tracking the advancing direction;

b) [determining a predetermined number of] counting said fine-grain indicator increments in said first direction; and,

c) thereafter, in response to continued receipt of scroll events, providing in a manner that is seamless to a user, coarse-grain scroll indicator movement by advancing said indicator for a pre-determined number of increments per scroll event in said first direction when a count of said fine-grain indicator increments exceeds a predetermined number, said coarse-grain scroll indicator movement greater than said fine-grain scroll indicator movement,

whereby fewer scroll device manipulations are required to achieve a desired scroll indicator position on said display.